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REPORT ON A COLLECTION OF MEMBRACIDÆ FROM THE COLOMBIAN ANDES, TAKEN BY MR. JOHN THOMAS LLOYD.¹

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Through the courtesy of Mr. John Thomas Lloyd I have been permitted to examine a small but very interesting series of insects belonging to the family Membracidæ, collected by Mr. Lloyd in the central Cordilleras in the spring of 1912, and representing a part of the collection made by Mr. Lloyd and Dr. A. A. Allen on their trip to this region. Only eight species are represented in this collection, but of these, one is new, and several of the others are of much interest on account of their rarity and the fact that they have seldom been mentioned in literature. The synonymy and bibliography of the South American forms of the Membracidae are in so much confusion

¹ Contribution from the Entomological Laboratory of Cornell University.

that I have thought it advisable to include the more important references to the species here mentioned.

The Membracidae were collected from two localities, "La Valle de las Papas" and "Almaguer." The former has been well described in Mr. Alexander's paper on the Tipulidae from this region (JOURN. N. Y. ENT. SOC., Sept., 1913, XXI: 3, 194) and the latter is mentioned in the same paper as including the village of that name and the "moss" forest on the mountain ridge west of the village. It was in this latter vicinity, on the trail, and at the edge of the forest that most of the membracids were taken.

The topography of the mountain sides throughout this region as described by Mr. Lloyd is most interesting, in that the forest zone does not begin until an altitude of about 10,000 feet is reached, and extends from that point upward to an altitude of 12,600 feet, above which the peaks are again free from trees to the summit. The absence of forests below the 10,000 feet line has not been explained, but Mr. Lloyd suggests that this area of the mountain sides may not receive the moisture laden winds which are intercepted by the peaks of the western range, while the area above is swept by these winds and is consequently humid and enabled to support vegetation. Both Dr. Allen and Mr. Lloyd have observed that the lower line of the forest seems to vary in altitude with that of the corresponding summits of the costal range, and average from 6,500 to 10,000 feet above the sea level.

In this forest the vegetation is so overgrown with moss that the plants and trees present a weird appearance, the trunks and branches seeming to be much larger than they really are, on account of the great loads of the moss and epiphytes which they are forced to bear (Pl. I, Fig. 1). The condition suggests the name "moss" forest, and on the trail through this forest insects were collected by sweeping and were taken from low plants and bushes.

At Almaguer the forest extends almost to the top of the mountain. The membracids were found at an altitude of 10,350 feet, just above the line at which the forest begins. Although the camp located at this place was only about thirteen miles from the village, the climatic conditions of the two localities were entirely different due to the difference in altitudes, the village being situated on the side of the range at an altitude of 7,500 feet and being without rain at a time

when the locality of the camp was in the zone of heavy precipitation. The specimens of membracids bear the date label March 11, 1912. Mr. Lloyd's field notes for this date record the weather as being rainy and cold, the rainy season having just commenced. The temperature on that date was 48° at 7:30 A. M. and 58° at noon. It is interesting to note that the temperature records showed an almost constant variation of ten degrees between the lowest and the highest temperature for each day.

The specimens from the Valle de las Papas were collected from March 21 to April 3. During this time it rained almost continuously and the locality was constantly submerged in heavy clouds; the altitude was 10,000 ft.

Subfamily MEMBRACINÆ.

1. *Campylenchia nutans* Germ.

1818. *Membracis nutans* Germ., Mag. Ent., IV: 28, 30.
 1835. Germ., Rev. Silb., LLL: 227, 14.
 1846. Fairm., Rev. Memb., 252, 33.
 1851. *Enchenopa nutans* Walk., List Hom. Brit. Mus., 482, 6.
 1858. *Membracis nutans* Stal, Rio Jan. Hem., II: 23, 7.
 1869. *Enchenopa nutans* Stal, Bid. Memb. Kan., 271, 4.
 1869. *Campylenchia nutans* Stal, Ofv. Vet. Ak. Forh., 271.
 1890. *Enchenopa nutans* Leth., Ann. ent. Soc. Fr., 153.
 1894. *Campylenchia nutans* Fowler, Biol. Cent. Amer., 12, 11, tab. 1,
 figs. 18, 18a.
 1903. *Enchenopa nutans* Buckton, Mon. Memb., 47, pl. 5, fig. 5.

Habitat.—Almaguer.

This species appears to be widely distributed throughout Central and South America. Canon Fowler records it from Panama, Bugaba, Caldera and David, and I have specimens from Brazil, Bolivia and British Guiana.

Subfamily HOPLOPHORINÆ.

2. *Alchisme inermis* Fairm.

1846. *Triquetra inermis* Fairm., Rev. Memb., 280, 1.
 1851. Walk., List Hom. Brit. Mus., 521, 1.
 1869. Stal, Bid. Memb. Kan., 266, 4.
 1903. *Microschema inermis* Buckton, Mon. Memb., 93, pl. 18, figs. 6, 6a, 6b.

Habitat.—Valle de Papas, Caqueta, Colombia; Almaguer.

A series of six specimens; three males and two females from the Valle de Papas, and one female from Almaguer.

Kirkaldy has proposed the name *Alchisme* for this genus (Entomologist, 1904, 37, p. 279) to take the place of the preoccupied genus *Triquetra*. It would seem at present a rather unnecessary multiplication of genera to raise Stal's subgenus *Microschema* to generic rank.

Subfamily SMILIINÆ.

3. *Ceresa vitulus* Fab.

1775. *Membracis vitulus* Fab., Syst. Ent., 677, 10.
 1781. Fab., Spec. Ins., II: 317, 11.
 1787. Fab., Mant. Ins., II: 265, 21.
 1794. Fab., Ent. Syst., IV: 14, 25.
 1803. *Centrotus vitulus* Fab., Syst. Rhyng., 20, 21.
 1820. *Centrotus pallens* Germ., Mag. Ent., III: 25, 26.
 1835. *Smilia vitulus* Burm., Handb. Ent., II: 137, 2.
 1835. *Smilia pallens* Germ., Rev. Silb., III: 235, 6.
 1840. *Membracis vitulus* Blanch., Hist. Nat. Ins., III: 180, 11.
 1843. *Ceresa vitulus* Am. & Serv., Hem., 540, 1.
 1846. Fairm., Rev. Memb., 283, 1.
 1846. *Ceresa spinifera* Fairm., Rev. Memb., 284, 6.
 1851. *Ceresa vitulus* Walk., List Hom. Brit. Mus., 525, 1.
 1851. *Ceresa spinifera* Walk., List Hom. Brit. Mus., 526, 6.
 1858. *Ceresa curvilinea* Walk., List Hom. Brit. Mus. Suppl., 132.
 1858. *Ceresa excisa* Walk., Ins. Saund. Hom., 68.
 1860. *Ceresa vitulus* Stal, Hem. Fab., II: 24, 2.
 1869. Stal, Bid. Memb. Kan., 246, 11.
 1877. Butler, Cist. Ent., II: 219, 27.
 1890. Leth., Ann. ent. Soc. Fr., 153.
 1894. Goding, Cat. Memb. N. A., 405, 36.
 1895. Fowler, Biol. Cent. Amer., 102, 1.
 1895. *Ceresa vitulus* var. *minor* Fowl., Biol. Cent. Amer., 103.
 1903. *Ceresa minor* Buckton, Mon. Memb., 171, pl. 35, figs. 6, 6a.
 1903. *Ceresa vitulus* Buckt. Mon. Memb., 172, pl. 35, figs. 8, 8a.

Habitat.—Almaguer.

I believe the above to be the correct synonymy of this species which is the type of Amyot and Serville's genus *Ceresa* and has had an interesting history in the literature of the Membracidae. It is apparently abundant throughout South America and extends in its range as far north as Mexico.

4. *Euretea personata* Stal.

1869. *Phacusa personata* Stal, Bid. Memb. Kan., 247, 2.
 1895. *Euretea personata* Fowler, Biol. Cent. Amer., 113, 1, tab. 7, figs. 22, 22a.

Habitat.—Almaguer.

One specimen which I determine as *Euretea personata*. This specimen agrees with Stal's description and the species is excellently figured by Fowler. It is evidently rare.

5. *Ennya bicristata* Stal. (Pl. 2, figs. 1 and 2.)

1869. *Ennya bicristata* Stal, Bid. Memb. Kan., 238, 3.

Habitat.—Almaguer.

I have been unable to find any record of this species in literature since Stal's original description. It is a remarkable and beautiful insect.

6. *Heranice miltoglypta* Fairm. (Pl. 2, figs. 3 and 4.)

1846. *Thelia miltoglypta* Fairm., Rev. Memb., 306, 2, pl. 5, figs. 4, 12.

1851. Walk., List Hom. Brit. Mus., 555, 2.

1867. *Heranice miltoglypta* Stal, Oefvers. Vet-Akad. Forh., 554.

1903. *Thelia multoglypta* Buckt., Mon. Memb., 194, pl. 42, figs. 3, 4.

1903. *Heranice* (?) *multoglypta* Buckt., Mon. Memb., 218, 5.

Habitat.—Almaguer.

A series of thirteen specimens of this remarkable membracid. The species is easily recognized by its strongly keeled pronotum and general boatlike aspect. Mr. Lloyd reports that this species was very abundant along the trail through the forest of Almaguer and he was very fortunate in securing an excellent negative showing adults, nymphs and eggs all on one plant (pl. 1, fig. 2). This plant is described as being a low thorny bush with large leaves and spiny branches but it was unfortunately not determined in the course of the expedition. According to the field notes it was found commonly and averaged from two to three feet in height.

7. *Thrasymedes pallescens* Stal. (Pl. 2, figs. 5 and 6.)

1869. *Phacusa pallescens* Stal, Bid. Memb. Kan., 247, 1.

1894. Goding, Cat. Memb. N. A., 410, 49.

1895. Fowler, Biol. Cent. Amer., 111, 2.

1903. Buckton, Mon. Memb., 175.

Habitat.—Valle de Papas, Caqueta, Colombia.

This species evidently has a wide range since the type locality is Mexico. It is seldom to be found, however, in collections. I have adopted Kirkaldy's proposed name for the preoccupied genus *Phacusa* of Stal.

8. *Maturna lloydi* new species. (Pl. 2, figs. 7 and 8.)

The genus *Maturna* was erected by Stal to admit *M. ephippegera* of Fairmaire and is characterized by the rounded unpronounced lateral angles and the compressed elevated dorsum. From the variation shown by the insects of the group to which this genus belongs, it would appear that these characters are not as distinct as might be desired, but at present the following species must be placed in the above genus.

Near *M. ephippegera* Fairm., but smaller, more slender, and with dorsal sinus and crests entirely lacking. Shape of pronotum recalling a small *Methesia* but with almost straight dorsum and only one discoidal area in tegmina. Sides of prothorax strongly three-ridged on each side; median carina prominent; posterior process barely exceeding apex of tegmina; base of tegmen strongly punctate and pubescent; color yellow-testaceous.

Head wider than long, very roughly sculptured, strongly punctate, pubescent; eyes brown, not prominent from front view but very prominent as seen from the side; ocelli white, prominent, equidistant from each other and from the eyes and situated slightly below a line passing through center of eyes; clypeus short, faintly trilobed. Pronotum long, narrow, rough, strongly punctate, very sparingly pubescent; front sloping backward above head, hollowed out above eyes; humeral angles rounded, not prominent; median carina strong and percurrent; three lateral ridges on each side, the two lower becoming obsolete before the humeral angles; dorsal line of thorax faintly sinuate, suddenly sloping downward behind middle; posterior process long, tectiform, gradually acute, extending just beyond the tips of elytra. Elytra more than half covered by the pronotum, proximal half coriaceous and opaque, densely punctured and pubescent; distal half hyaline with faint fuscous cloud at tip. Pectoral regions and undersurface of abdomen deep chocolate brown. Legs luteus; femora smooth and slightly marked with brown; tibiae finely spined. Type—Male. Length 6 mm.; width between humeral angles 2.3 mm.

Habitat.—Valle de Papas, Caqueta, Colombia.

EXPLANATION OF PLATES.

PLATE X.

Figure 1. Adults, nymphs and eggs of *Heranice mitloglypta* Fairm. Photographs by Mr. J. T. Lloyd.

Figure 2. Forest of Almaguer, showing moss-covered vegetation.



Fig. 1.

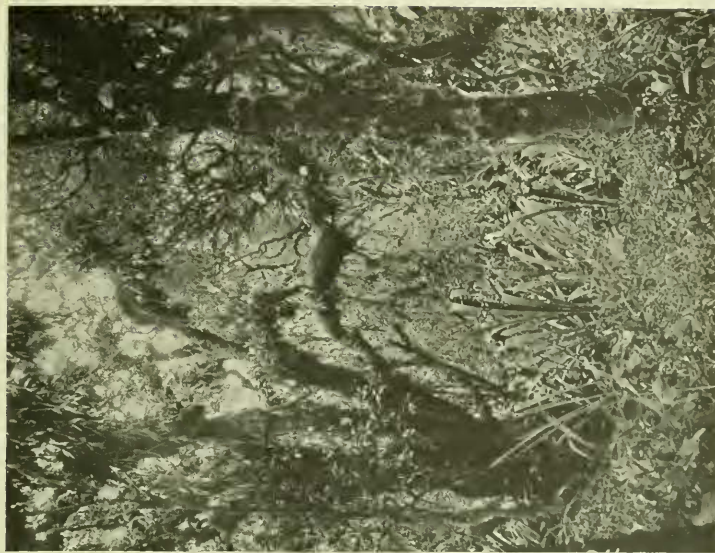


Fig. 2.

Membracidae.